

Big Berger Creek Bridge
Spanning Big Berger Creek on Route B
Etlah
Franklin County
Missouri

HAER No. MO-39

HAER
MO,
36-ETL,
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
Rocky Mountain Regional Office
National Park Service
U. S. Department of the Interior
P. O. Box 25287
Denver, Colorado 80225

HISTORIC AMERICAN ENGINEERING RECORD

Berger Creek Bridge

HAER No. MO-39

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MO,
36-ETL,
1-

Location: Spanning Big Berger Creek on Route B in the town of
Etlah, Franklin County, Missouri

UTM: A-15.4278010N.650060E
B-15.4278050N.650110E

Quad: Berger

Date of Construction: 1894

Builder: Stupp Brothers Bridge and Iron Company

Present Owner: Missouri Highway and Transportation Department
P. O. Box 270
Jefferson City, Missouri 65102

Present Use: Vehicular bridge, to be replaced by a new vehicular
bridge. Projected date of removal is early summer
1988. Metal truss will be donated to the National
Arbor Day Foundation.

Significance: The Big Berger Creek Bridge is a rare example of late
19th century bridge building technology by one of the
midwest's major fabricator, the Stupp Brothers Bridge
and Iron Company.

Compiler: David B. Crampton, Archeologist
Missouri Highway and Transportation Department
March 1988

I. HISTORY

A. The Stupp Brothers Bridge and Iron Company

John Stupp immigrated from Germany in 1854. In 1856, he established the South St. Louis Iron Works, which eventually became the Stupp Brothers Bridge and Iron Company, a firm still in operation on an international scale today. The firm began making ornamental iron fence, gates and building fronts. It also produced lathes, boilers, and engines for other St. Louis manufacturers. During the Civil War, the company produced armor plating for the Union iron-clad Mississippi River gunboats.

The 1880s, Stupp's sons, George, Peter and Julius, entered the business. The company expanded into the structural steel business as the demand for this product increased. It was in the 1880s that the Stupp organization began designing and fabricating bridges. The company was incorporated under its present name in 1890. It continued to expand as the demand for steel increased. In 1903, the company moved its present location in St. Louis County. Today, it supplies structural steel for bridges, high-rise buildings and national defense purposes. The Stupp Company manufactured military equipment and hardware in both World Wars.

The Berger Creek Bridge was built in 1894 for the Franklin County road commissioners, four years after the Stupp Company was incorporated under its present name.

II. DESCRIPTION

The Berger Creek Bridge, W-179, is a single-span, eight-panel Pratt through truss bridge. It has little ornamentation with the exception of curved and latticework portal bracing. Name plates were mounted on each end of the bridge. One name plate has been given to a requested local citizen interested in the history of the bridge, at the request of his community; the other will be given, with the bridge, to the National Arbor Day Foundation. Further description is contained in the list of materials, dating from 1894, which was obtained from the Franklin County Engineer's Office and is attached to complete this documentation.

III. REFERENCES

Nixon, Joseph M., M. Colleen Hamilton, Joseph Harl and Barbara A. Vogler
1987 Report of Historic, Prehistoric and Architectural Survey of
Proposed Cedar Falls Road Bridge Replacement Site, St.
Francois County, Missouri. Report prepared for the Federal
Highway Administration.

Stupp Brothers Bridge and Iron Company
n.d. Brochure: Stupp Brothers Bridge and Iron Company. Undated
promotional brochure.

Specifications for Big Burger Creek Bridge

Etlah Station

The work in this contract consists in building and putting in place ready for travel, the Superstructure (sic) and Substructure of one span 128 by 16 feet Roadway, and two approaches each 18 feet long. All dimensions and sizes to be in accordance with the plan which is made a part of this contract.

Material (sic)

All riveted (sic) material to be of mild steel capable of withstanding a test of at least 54000 pound tension per square (sic) inch, before rupturing, and to have an elastic limit of at least one half of its ultimate (sic) strength and a minimum elongation (sic) of 26% in 8 inches. Plates must admit of being bent 180° without sign of cracking on outside of bent portion.

Details for Superstructure

Top chords and End Posts to be covered with 12x1/4 plate securely riveted to channels. Bottom side of top chords and end posts to be laced with 1 3/4x1/4 lacing bars running at and (sic) angle of about 60° from the axis of the member, and shall have 6x1/4 stay plates, placed as near the ends of the member as possible. Shoes to be fixed and to be composed of 2 side plates & 2-2 1/2x2 1/2 angles and 1/2 sole plates

All pin plates to be of sufficient thickness and have a sufficient number of rivets to develop the full strength of the member.

Vertical posts to be laced on both sides with 1 1/2x1/4 lacing bars for 6 inch channels and 1 1/4x1/4 for 5 inch channels. Lacing to run at an angle of about 60° with the axis of the member. Stay plates shall be placed near the ends of the posts and the channels shall extend below the lower chord pins in order to rivet the floor beams securely to them.

Substructure

Tubes may be built with either lap or butt joints. Cap plates shall be securely fastened to tubes by means of 1-2 1/2x2 1/2 angle securely riveted to tubes.

Provision shall be made to hold the shoes firmly in place on the caps of tubes.

Rivets and bolts for tubes to be 5/8 and have a pitch not to exceed 5 inches.

All tubes shall be securely anchored to bed rock by 4-1 1/8" anchor bolts to each tube, and shall be filled with concrete. Concrete shall be made of one part Louisville cement, two parts clean sharp sand and five parts broken rock, which shall be broken to pass through a 3 inch ring. Two to three parts of coarse gravel may be substituted (sic) for the broken rock at the option of the Bridge Commissioner

----- One end of span to rest on nest of -----
----- ?-iron rollers supported by suitable -----
----- ?-bed plates (Hand written in original contract) -----

Workmanship

All workmanship shall be first class in every respect.

All abutting surfaces of compression members must be planed to even bearing so that they shall be in contact (sic) throughout.

Rivets shall be of mild steel, and they shall completely fill the holes when driven and shall have heads truly concentric with the body of the rivet.

The pitch of rivets shall be not less than 2 inches nor greater than 6 inches.

Wood work

The floor shall be of sound white oak lumber 3" inches thick.

[If wooden joists are used on the span they shall be 4x12 sound White Oak spaced in 9 lines.] (Bracketed line crossed out in original contract)

Joists for approaches shall consist of 9 lines of 4 x 12 inches White Oak resting on 8 x 12 inches White Oak mudsill.

There shall be a felloe guard of 4 x 6 inches White Oak on each side running the complete length of the bridge and securely bolted to the floor.

Railing

Railing for entire bridge to consist of 1 line of 2 inch Gas pipe and 2 lines of 1 1/2" inch Gas pipe fastened to trusses where

practicable and at other points fastened to floor by means of cast iron posts.

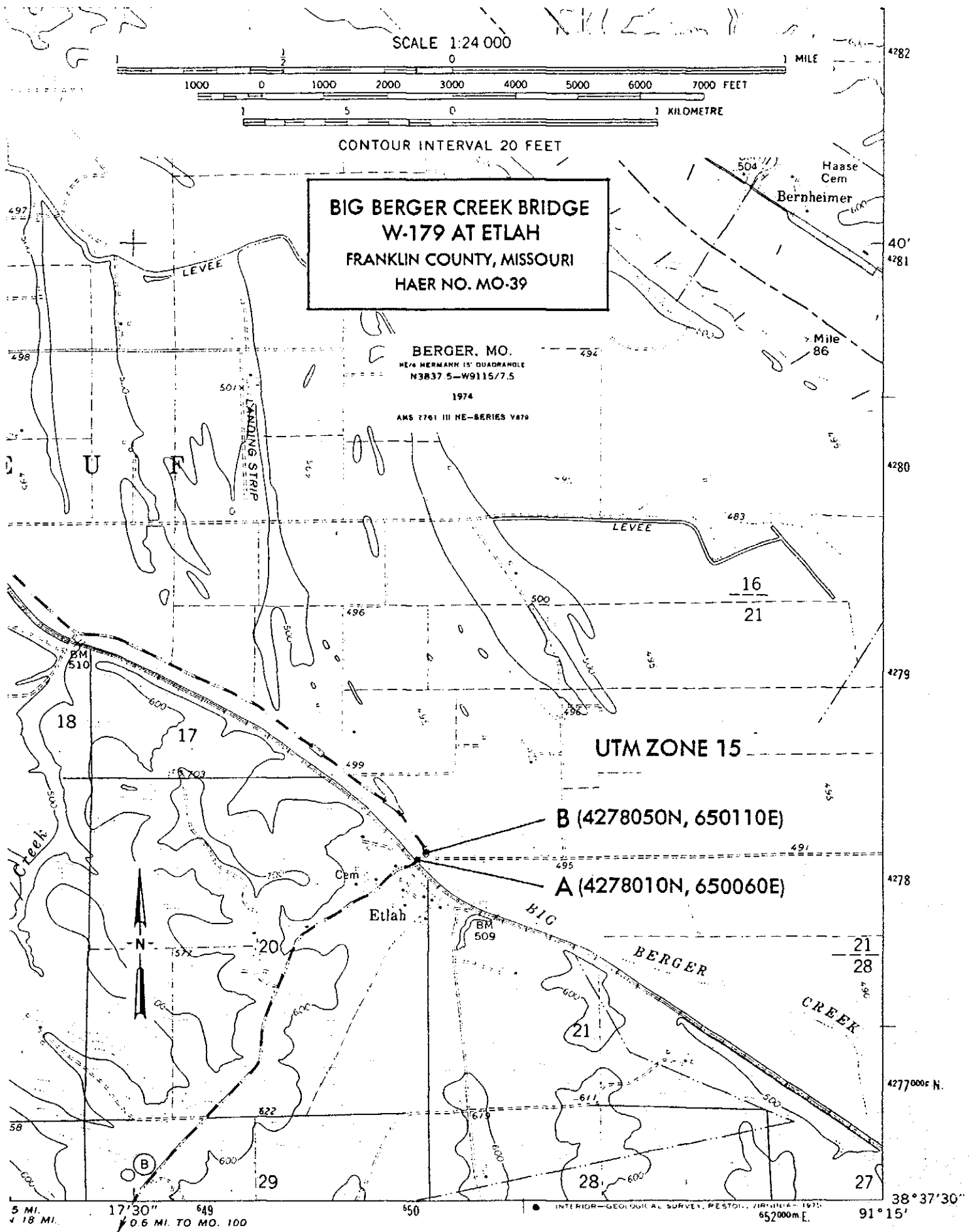
Painting

All shapes coming in contract (sic) shall be painted before riveting up.

All metal shall receive one coat of paint before leaving the shop and one after erection.

All work must be done to the satisfaction and acceptance of the Bridge Commissioner of Franklin County, Missouri., in charge of the work and shall be completed within 90 days from date of contract.

Chas. L. Moore
Road & Bridge Commr.
Franklin County, Missouri
(Hand written in original contract)



MAP 1